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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,316	11/19/2003	Allan Rosencwaig	TWI-8520	8272
28584	7590	11/02/2004	EXAMINER	
STALLMAN & POLLOCK LLP SUITE 2200 353 SACRAMENTO STREET SAN FRANCISCO, CA 94111			PUNNOOSE, ROY M	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/717,316	<b>Applicant(s)</b> ROSENCWAIG ET AL.	
	<b>Examiner</b> Roy M. Punnoose	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-7 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/5/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 1 is objected to because of the following informalities: it appears that the word "one" is missing between "least" and "or" on line 8. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyai et al (US 5,825,470) in view of Yoshii et al (US 5,625,657) and further in view of K. Imen et al ("Laser assisted micron scale particle removal," App. Phys. Lett., Vol. 58, No. 2, 14 January 1991, pp. 203-205).
4. Claim 1 is rejected because:
  - A. Miyai et al (Miyai hereinafter) discloses an optical inspection system 56, 58 (see col.9, lines 36-39, Figure 1) coupled to a cleaning system 106 (see col.19, lines 12-15, Figure 2), said cleaning system functioning to reduce contaminants on a wafer 34 (see col.8, line 45) so that the analysis of the wafer by the optical inspection system can be more accurately. However Miyai does not explicitly disclose that the cleaning system is operatively coupled to the optical inspection system, or, explicitly state that said cleaning system includes at least one or more of the modalities selected from the group consisting of microwave

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excitation, radiant heating, conductive heating and optical radiation, in an apparatus for evaluating a semiconductor wafer so that the evaluation can be done more accurately.

- B. Yoshii et al (Yoshii hereinafter) discloses an optical inspection system 923 (see Figure 11) operatively coupled to a cleaning system 921 (see Figure 2), said cleaning system functioning to reduce contaminants on a wafer 910, so that the analysis of the wafer by the optical inspection system can be more accurately.
- C. K. Imen et al (Imen hereinafter) discloses a cleaning system that includes optical radiation (see third paragraph on the right side of page 203, and Figure 1) in an apparatus for evaluating a semiconductor wafer so that the evaluation can be done more accurately.
- D. In view of Yoshii's and Imen's teachings, it would have been obvious to one of ordinary skills in the art at the time the invention was made to incorporate operatively coupling an optical inspection system to a cleaning system, and using optical radiation for cleaning the substrate into Miyai's apparatus for evaluating a semiconductor wafer so that the evaluation can be done more accurately.
5. Claim 2 is rejected because Miyai teaches that the optical inspection system 56, 58 (Figure 1) and the cleaning system 106 (see Figure 2) are located in adjacent but separate modules 12 and 14.
6. Claim 3 is rejected because Miyai further teaches a wafer transport coupled to the cleaning module 14 and the optical inspection module 12 which operates to transport a wafer cleaned by the cleaning module to the optical inspection module (see col.10, lines 58-63).
7. Claim 4 is rejected because Imen shows in Figure 1 that the inspection system and the cleaning system are located in the same chamber.

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8. Claims 5, 6 and 7 are rejected because, in view of Imen's teaching of one type cleaning system (having optical radiation), it would have been obvious to one of ordinary skills in the art at the time the invention was made to select other types of cleaning system including one that uses UV radiation or a conductive heat source for cleaning the substrate before evaluating the semiconductor wafer so that the evaluation can be done more accurately.

***Conclusion***

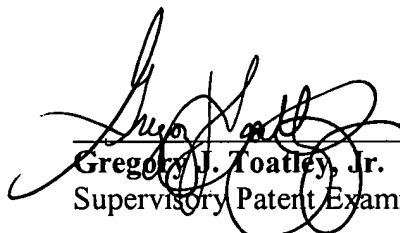
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Roy M. Punnoose** whose telephone number is **571-272-2427**. The examiner can normally be reached on 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Gregory J. Toatley, Jr.** can be reached on **571-272-2800 ext.77**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Roy M. Punnoose**  
Patent Examiner  
Art Unit 2877  
October 26, 2004



  
**Gregory J. Toatley, Jr.**  
Supervisory Patent Examiner